

REMARKS

Claims 1-6, 17-32, 34, 36, and 38-47 have been rejected. Claims 7-16 are objected to as being dependent on a rejected base claim.

Applicants amend Claims 1, 2, 3, 38, 39, 43 and 46 herewith. Claim 47 is hereby canceled.

Claim 1 has been amended to recite the subject matter of Claim 47 and to recite that “the image-forming layer is provided directly on the light-to-heat converting layer.” Support for the amendment can be found, for example, on page 128, lines 8-9.

Claims 2 and 3 have been amended to recite “of each of the light-to-heat converting layers in the at least four thermal transfer sheets” after the word “thickness.” Support for the amendment can be found in the specification, for example, at page 23, lines 3-5.

Claims 38 and 39 have been amended to recite “of each of the image-forming layers in the at least four thermal transfer sheets” after the word “thickness.” Support for the amendment can be found in the specification, for example, at page 24, line 25, through page 25, line 26.

Claims 43 and 46 have been amended to recite that the recording area of the multicolor image is a size of 515 mm or more multiplying 728 mm or more and the light-to-heat converting layer contains a matting agent having a particle size of 0.3 to 30 μm .” Support for the amendment can be found, for example, at page 23, lines 3-5.

Upon entry of the above amendment, Claims 1-32, 34, 36 and 38-46 are all the claims pending in the application.

Applicants submit herewith an executed copy of the Declaration of Akihiro Shimomura.

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§ 103 Rejection of Claims 1-6, 17-32, 34, 36 and 38-46 over Imamura in view of Kawakami

Examiner has rejected Claims 1-6, 17-32, 34, 36, and 38-47 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,935,902 to Imamura ("Imamura") in view of U.S. Patent No. 6,027,850 to Kawakami *et al.* ("Kawakami").

Applicants' Response

Applicants have amended Claims 1, 43 and 46 to recite the subject matter of Claim 47. Kawakami does not teach the recited features of Claim 47. Thus, reconsideration of Claims 1-6, 17-32, 34, 36 and 38-46 is respectfully requested.

§ 103 Rejection of Claims 1-6, 17-32, 36 and 38-46 under Takahashi or Nakamura in further view of Kawakami

Examiner has rejected Claims 1-6, 17-32, 34, 36, and 38-46 under 35 U.S.C. § 103(a) as allegedly being unpatentable over either U.S. Patent No. 6,326,121 to Takahashi ("Takahashi") or U.S. Patent No. 6,235,445 to Nakamura *et al.* ("Nakamura") in further view of Kawakami.

Applicants' Response

Applicants have amended Claims 1, 43 and 46 to recite the subject matter of Claim 47. The combination of Takahashi, Nakamura and Kawakami does not teach the recited features of Claim 47. Thus, reconsideration of Claims 1-6, 17-32, 34, 36 and 38-46 is respectfully requested.

§ 102(e) Rejection of Claims 43-46 over Wachi

Examiner has rejected Claims 43-46 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,458,504 to Wachi *et al.* ("Wachi").

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Applicants' Response

Applicants have amended Claims 43 and 46 to recite the subject matter of Claim 47. Wachi does not teach the recited features of Claim 47. Thus, reconsideration of Claims 43-46 is respectfully requested for at least this reason.

§ 102(e) Rejection of Claims 43-46 over JP '941 or JP '287

Examiner has rejected Claims 43-46 under 35 U.S.C. § 102(a) as allegedly being anticipated by Japanese Publications 2001/310941 ("JP '941") or 2001/328287 ("JP '287"). Examiner points out that these publications are the foreign equivalents to Wachi.

Applicants' Response

Applicants have amended Claims 43 and 46 to recite the subject matter of Claim 47. Neither JP '941 or JP '287 teach the recited features of Claim 47. Thus, reconsideration of Claims 43-46 is respectfully requested for at least this reason.

§ 103 Rejection of Claims 1-32, 34, 36 and 38-47 over Wachi, JP '941 or JP '287 in view of

Kawakami

Examiner has rejected Claims 1-32, 34, 36, and 38-47 under 35 U.S.C. § 103(a) as allegedly being unpatentable over either Wachi or the combination of JP '941 or JP '287 in further view of Kawakami.

Applicants' Response

Initially, we note that Examiner states that this rejection covers Claims 7-16. It appears to us that the rejection is only intended to cover Claims 1-6, 18-32, 34, 36, and 38-47. Therefore,

we assume that Claims 7-16 are contain allowable subject matter despite the wording of the rejection.

Wachi, JP '941 and JP '287 do not teach or suggest the instantly claimed resolution of Claim 1. Furthermore, Wachi, JP '941 and JP '287 do not teach or suggest the instantly claimed recording area size. Wachi describes an image-receiving sheet with the dimensions 25 cm by 35 cm and a heat transfer sheet with the dimensions 30 cm by 40 cm. *See* column 33, lines 34-49. JP '941, in paragraph 51, describes the use of a sheet of A4 size (210 mm multiplying 297 mm) and JP '287, in paragraph 90, describes an image-receiving sheet with the dimensions 25 cm by 35 cm and a heat transfer sheet with the dimensions 30 cm by 40 cm. Therefore, Wachi, JP '941 and JP '287 are outside the scope the present invention.

Kawakami fails to teach a matting agent having a particle size of 0.3 to 3 μm in a light-to-heat converting layer. Therefore, Kawakami is also out of the scope of the present invention.

Thus, in view of the fact that the above cited references are outside the scope of the instantly claimed invention, one of ordinary skill in the art would have no suggestion to combine the cited references to arrive at the present invention.

Also, the present invention possesses an unexpected superiority of the closest prior art. *See* Declaration of Akihiro Shimomura. In his declaration, Mr. Shimomura provides the following experiment:

Experiments 1, 2 and 3

A transferred image to actual paper in each of Experiments 1, 2 and 3 was formed in the same manner as in Example 1 of the present specification except for not using the matting agent and changing the image recording area size as set forth in the Table A below. Each of the black transfer images in the obtained images

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was evaluated in view of the Image Transfer Rate and Image Quality (Solid Part and Line Image Part) in the same manner as in Example 1 of the present specification. The results are shown in Table A together with Example 1 and Comparative Example described in the present specification.

| Table A | OD/layer thickness of light-to-heat converting layer | Image recording area size | Matting agent in light-to-heat converting layer | Evaluation: Difference in image transfer rate | Image Quality: solid part | Image Quality: line image part |
|---------------------|------------------------------------------------------|---------------------------|-------------------------------------------------|-----------------------------------------------|---------------------------|--------------------------------|
| Example 1 | 3.44 | B2 | Present | 2.1% *1: 97.5% *2: 95.4% | ○ | ○ |
| Comparative Example | 0.45 | B2 | Present | 6.7% *1: 94.0% *2: 87.3% | Δ | x |
| Experiment 1 | 3.44 | B2 | Absent | 4.1% *1: 96.7% *2: 92.6% | ○ | ○ |
| Experiment 2 | 3.44 | A3 | Absent | 3.0% *1: 97.0% *2: 94.0% | ○ | ○ |
| Experiment 3 | 3.44 | A4 | Absent | 2.2% *1: 97.1% *2: 94.9% | ○ | ○ |

SOLID PART: (○) time lag in recording time and transfer failure were not observed; (Δ) time lag in recording time and transfer failure were observed.

LINE IMAGE PART: (○) the edge of the line image part was sharp and good definition was shown; (x) bridging occurred entirely.

In the Experiment, the evaluation of image transfer rates was calculated from the difference between the image transfer rate determined at a temperature of 26°C and a humidity of 65% (recording condition *1) and the image transfer rate determined at a temperature of 20°C and a humidity of 40% (recording condition *2). As can be seen from Table A, the influence

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temperature and humidity varied greatly depending on the image recording area size (including the sizes of heat transfer and image-receiving sheets) and on presence of the matting agent in the light-to-heat converting layer. The above results could not have been expected from each of the cited references. In addition, the achievement of very high image-transfer rates (e.g., 97.5% and 95.4%) in a large image-recording area size (B2) under the recording conditions *1 and *2 respectively was only achieved by Example 1.

Also, the resistance of the present image-forming material to changes in temperature and humidity can also be attributed to such the high OD/ layer thickness ratio of the light-to-heat converting layer in the present invention.

Accordingly, Applicants respectfully request that the rejection be withdrawn.

§ 102/103 Rejections of Claims 43-46 over Wachi, JP '941 or JP '287 in view of Kawakami

Examiner has rejected Claims 43-46 under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over Imamura.

Applicants' Response

Applicants have amended Claims 43 and 46 to recite the subject matter of Claim 47. The combination of Wachi, JP '941, JP '287 and Kawakami does not teach or suggest the recited features of Claim 47. Thus, reconsideration of Claims 43-46 is respectfully requested.

§ 102/103 Rejections of Claims 43-46 over Takahashi or Nakamura

Examiner has rejected Claims 43-46 under 35 U.S.C. § 102(a) and (e) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over Takahashi or Nakamura.

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Applicants' Response

Applicants have amended Claims 43 and 46 to recite the subject matter of Claim 47. Neither Takahashi or Nakamura teach or suggest the recited features of Claim 47. Thus, reconsideration of Claims 43-46 is respectfully requested.

§112, Second Paragraph, Rejection of Claim 38

Examiner has rejected Claim 38 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Specifically, Examiner asserts that the term “OD/layer thickness” in claim 38 lacks clear antecedent singular basis since parent claim 1 has two layers with defined optical density to layer thickness.

Claim 38 has been amended in order to clarify that the recitation of OD/layer thickness ratio refers to the “each of the image-forming layers in the at least four thermal transfer sheets.” Thus, reconsideration of the § 112, second paragraph, rejection is respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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